2001 Energy

An Energy Efficiency Workshop & Exposition

Kansas City, Missouri

INDUSTRIAL ASSESSMENT CENTERS

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA ·

IIT

SCIENCE CENTER
UNIVERSITY CITY
Linking knowledge, business and technology

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Presentation Goals

- Introduction to IAC Program
- FEMP Opportunities

IAC Program Background

- Energy Analysis and Diagnostic Program (EADC) established in late 70's
- EADC expanded to include waste and productivity services in 90's, renamed IAC
- Currently, centers are located at 26 engineering colleges across the U.S.

IAC Program Background

- Over 9,000 assessments have been completed since program inception
- IACs have recommended cumulative cost savings of over $700 million
- More than 2,000 engineering students have been trained

IAC Program Background

- Clients
  - Private sector manufacturing plants, within 150 mile radius of IAC
  - Typically, SIC 20-39
  - Originally addressed small- and medium-sized plants with single-day visits
  - Expanded to include Industries of the Future, their suppliers and customers with multi-day visits

IAC Program Background

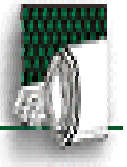
- Additional Client Selection Criteria
  - Industrial firms within the Industries of the Future sectors and their suppliers and customers.
  - Utility costs between $100,000 / yr and $2.0 million / yr
  - Gross sales less than $100 million / yr
  - Less than 500 employees
  - Lack of in-house professional expertise to perform the assessment

Industries of the Future

- DOE's Office of Industrial Technologies (OIT), Industries of the Future (IOF) Initiative focuses on nine energy- and waste- intensive industries which use more than 70% of the energy consumed in the U.S.

Industries of the Future

ALUMINUM 

FOREST PRODUCTS 

MINING 

CHEMICALS 

GLASS 

PETROLEUM 

AGRICULTURE 

METAL CASTING 

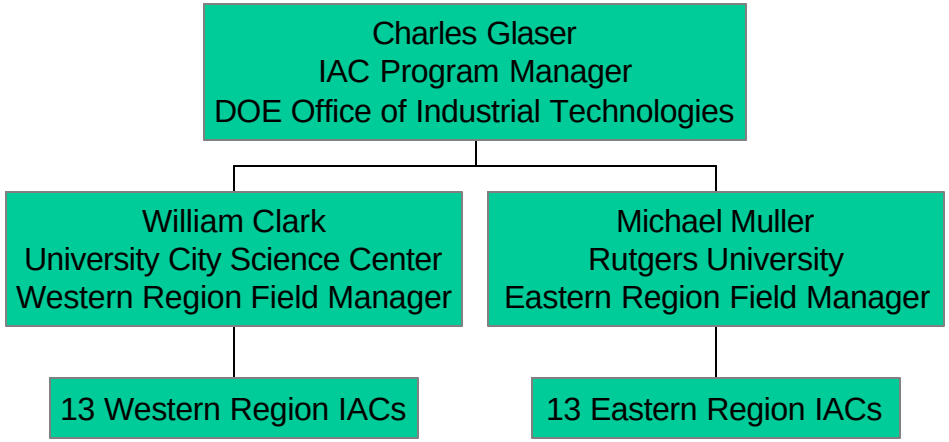
STEEL 

IAC Program Structure

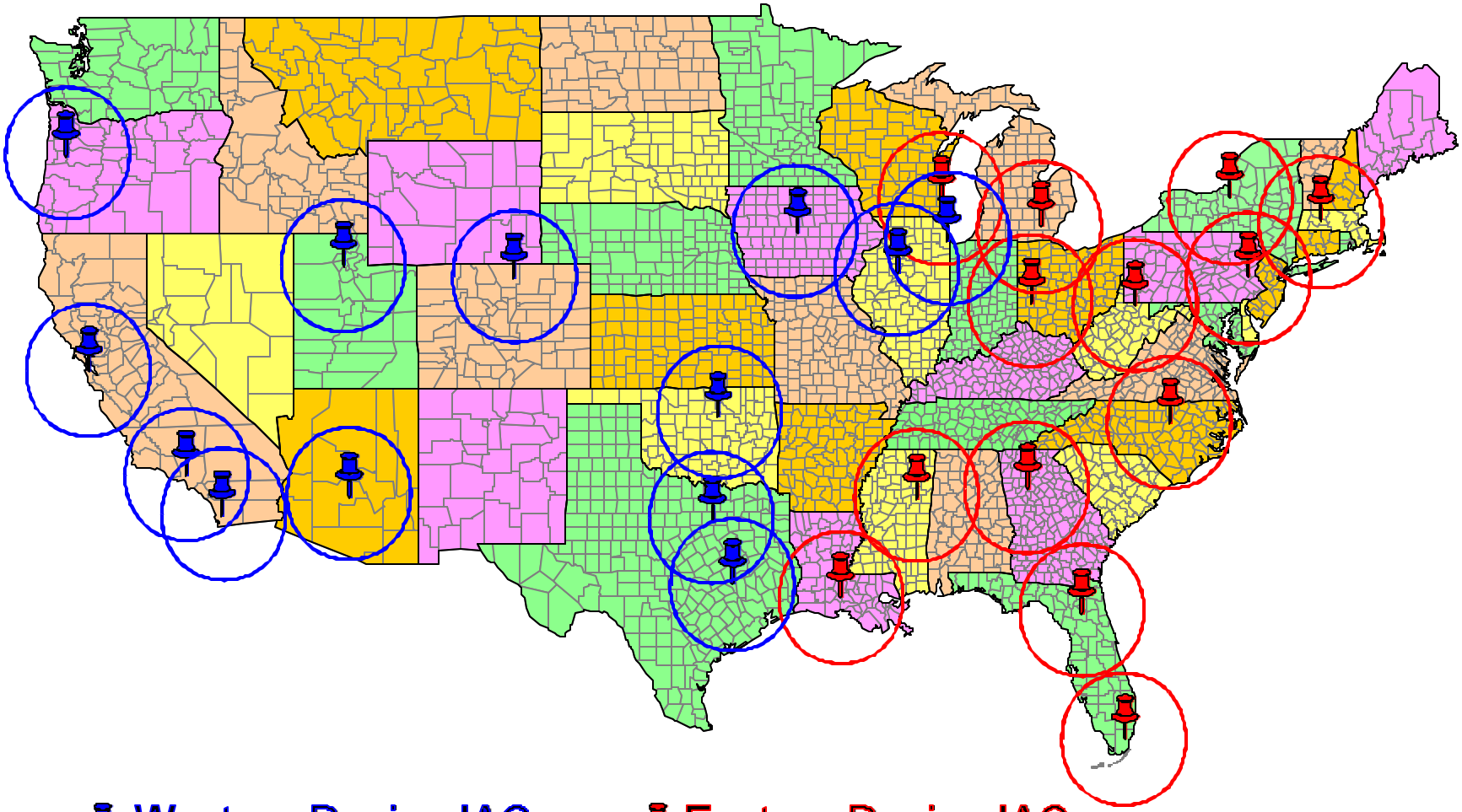
- Private sector assessments are funded by DOE's Office of Industrial Technologies (OIT), the home for the IAC Program

- Limited Funding is currently available for Federal assessments through FEMP's **Industrial Facilities Program**

IAC Program Structure



IAC Program Structure



IAC Program Structure

Western Region

Arizona State University
Bradley University
Colorado State University
Iowa State University
University of Illinois at Chicago
Loyola Marymount University
Oklahoma State University
Oregon State University
San Diego State University
San Francisco State University
Texas A&M University
University of Texas at Arlington
University of Utah

Eastern Region

University of Dayton
University of Florida
Georgia Institute of Technology
Lehigh University
University of Louisiana at Lafayette
University of Massachusetts
University of Miami
University of Michigan
Mississippi State University
North Carolina State University
Syracuse University
West Virginia University
University of Wisconsin-Milwaukee

IAC Assessment Teams

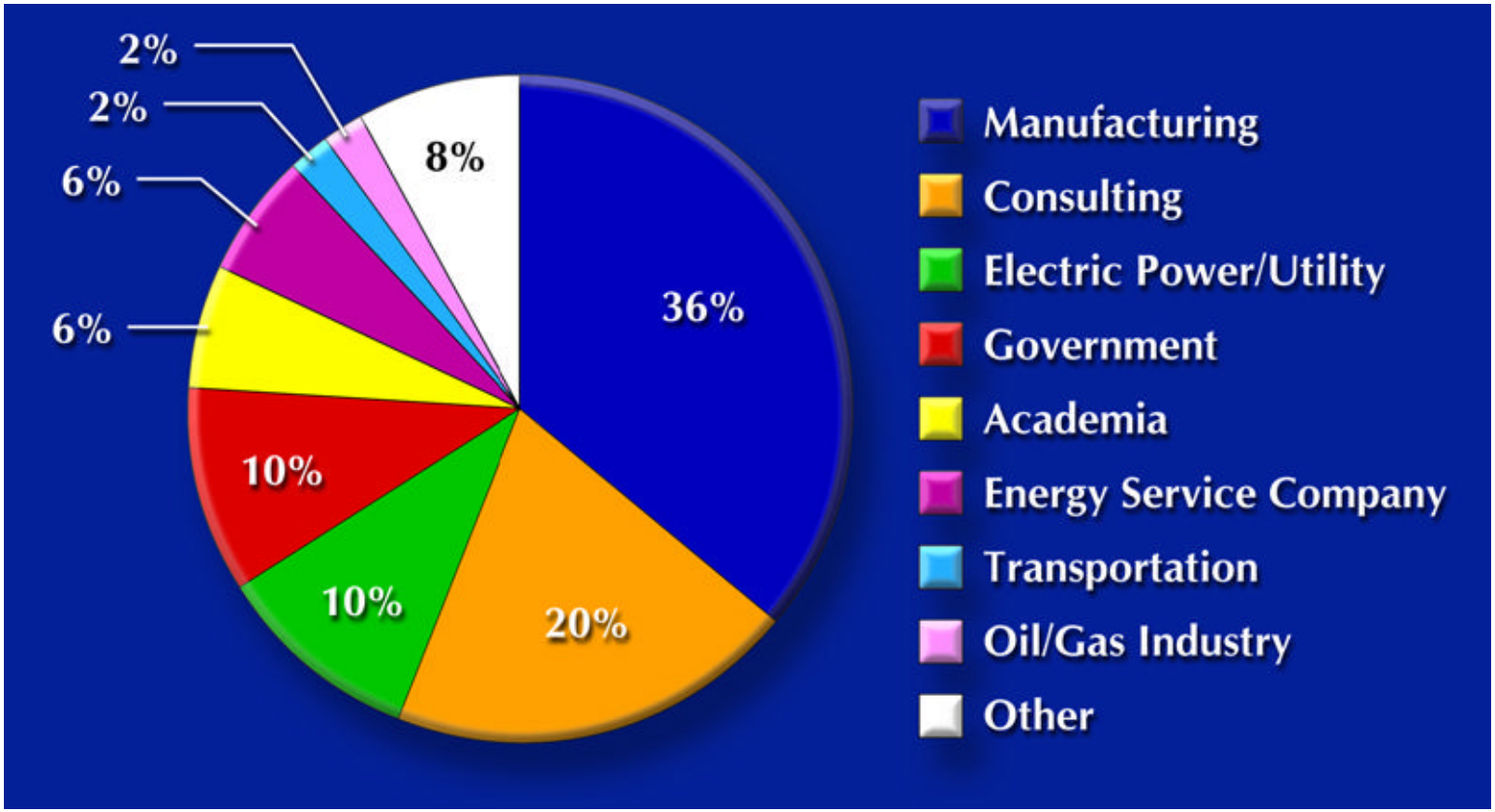
- IAC Engineering Teams
  - Director and Assistant Director
  - Professional Staff
  - Six or More Engineering Graduate and Upper-Level Undergraduate Students

IAC Assessment Teams

- IAC Engineering Faculty and Professional Staff
  - Lead all assessments
  - Review all analyses and reports
  - 20 PE's, 4 CEM's
  - Multi-disciplinary (mechanical, electrical, industrial, chemical engineers)
  - Maintain professional relationships with local utilities, ESCO's, suppliers, government

IAC Assessment Teams

- Graduating IAC students are in high demand



IAC Assessment Activities

- Pre-visit Activities
  - client interview
  - utility data analysis
- Single- or multi-day on-site visit
  - Kick-off meeting
  - Tour
  - Data collection, diagnostic testing
  - Wrap-up

IAC Assessment Activities

- Assessment Equipment Toolbox
  - Combustion Analyzer
  - Electrical Measurement (e.g., ampmeters, voltmeters, multimeters, watt meters, . . .)
  - Temperature and Relative Humidity Meters
  - Distance Measurement
  - Speed Measurement
  - Data Acquisition Systems
  - Ultrasonic Leak Detectors
  - Flow Meters
  - DOE and EPA Software Tools

IAC Assessment Activities

- Post-visit activities
  - Engineering analysis
  - Economic analysis
  - Product identification (vendor contact)
  - Documentation
- Assessment Follow-up
  - Implementation status
  - Minor follow-up technical support
  - Optional: on-site presentation of results

IAC Assessment Reports

- Provided within 60 days of an assessment
- Plant layout, production, energy and waste flows
- Detailed accounting and analysis of energy consumption and utility costs
- Detailed engineering analyses of energy, waste and productivity savings opportunities

IAC Assessment Reports

- Equipment cut sheets and installation cost estimates
- Economic analyses

IAC Federal Assessments

- Bureau of Engraving and Printing
  - Dept. of Treasury
  - Dayton, W. Virginia IAC's
  - Compressed Air and Steam System Consultants with DOE Best Practices

- Crown Rd Processing and Distribution Center
  - USPS
  - Georgia Tech IAC

Bureau of Engraving and Printing

- Washington DC Facility (1914, 1938)
- 2 million sq. feet (process & admin.)
- Currency Printing ($5.5 Billion / yr)
- Stamp Printing (19 billion stamps / yr)
- IAC / Best Practices Assessment Team

Bureau of Engraving and Printing

Highlights of Recommendations*

- Steam Traps: $140,000 / yr
- Compressed Air: $75,000 / yr
- Lighting: $40,000 / yr
- Motors: $30,000 / yr
- Back-pressure Turbine: $30,000 / yr

*partial preliminary results pending final report

USPS Crown Rd P&DC

- Processing and Distribution Center, Atlanta
- 457,000 sq. feet
- 3 shifts, 24/7
- Handles 3-5 Million pieces per day
- Electric Costs: $801,000 /yr
- Gas Costs: $45,000 /yr

USPS Crown Rd P&DC

Highlights of Recommendations*

- HVAC (water-, air-side economizers, setback): $64,000 / yr
- Lighting Control and Efficiency: $56,000 / yr
- Bay Doors: $10,000 - $45,000 / yr

*partial preliminary results pending final report

IAC Federal Assessments

- San Diego State IAC - Summer 2001
  - To conduct ALERT Team Assessments for FEMP in S. California
  - “Swat Team” Assessments

For Further Information

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